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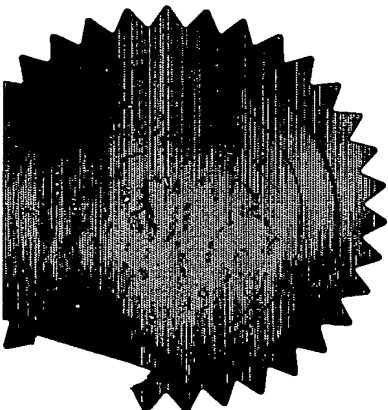
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2.	Patent Application number (The Patent Office will fill in this part)	- 7 AUG 2003	0318527.9	
3.	Full name, <u>UNIVERSITY OF</u> applicant (underline all surnames)	SUSSEX INTELLECTUAL PROPERTY LTD trading as SUSSEX IP Sussex Innovation Centre Science Park Square Falmer, Brighton BN1 9SB Patents ADP Number (if you know it) 8688665001 If the applicant is a corporate body, give the country/state of its incorporation United Kingdom		
4.	Title of the invention	LID, IN PARTICULAR FOR A DISPOSABLE CUP		
5.	Name of your agent (if you have one) "Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode) Patents ADP Number (if you know it)	FRY HEATH & SPENCE LLP The Gables Massetts Road Horley Surrey RH6 7DQ United Kingdom 05886273001 8459554001		
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Description 9

Claim(s) 3

Abstract 1

Drawing(s) 5 only

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Priority documents

Translations of priority documents

Statement of inventorship and right to grant of a patent (Patents Form 7/77)

Request for preliminary examination and search (Patents form 9/77) 1

Request for substantive examination (Patents form 10/77)

Any other documents (please specify)

11.

I/We request the grant of a patent on the basis of this application.

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Date

Keith Boden

7 August 2003

12.

Name and daytime telephone number of person to contact in the United Kingdom

Dr Keith Boden - 01293 776880

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DUPLICATE

LID, IN PARTICULAR FOR A DISPOSABLE CUP

The present invention relates to a lid for a cup, in particular a disposable cup, which provides for use of a beverage bag unit comprising a beverage bag and a drawstring connected to the beverage bag, where a beverage product, in particular an infused beverage product, such as tea, is obtained by immersion of a beverage bag in a beverage liquid.

Beverage products are commonly supplied for consumption in disposable plastic cups, these cups often being provided with a lid to prevent spillage, such as when carried. Also, where the beverage product is a hot product, the lid acts to maintain the temperature of the beverage product.

Conventional lids are inadequate for use with beverage bag units, as the drawstring has to pass between the lid and the cup, thus breaking the seal as normally provided by the lid, and requiring the lid to be removed in order to remove the beverage bag on attainment of a beverage product at the required strength.

More recently, a lid has been developed for use with a tea bag which includes a cross-shaped slit through which the drawstring is threaded, such that, following a required infusion, the drawstring is drawn up through the slit to cause the tea bag to be drawn into the slit and be held captive thereby.

This lid still, however, suffers from a number of disadvantages. Notably, the drawstring has to be pre-threaded, both because it is particularly difficult to thread the drawstring through the slit, akin to threading the eye of a needle but where the slit does not present an aperture, and because the tab, which is provided to the drawstring to allow a user to raise the tea bag, has to be attached to the drawstring following threading. In addition, as the drawstring is a tight fit in the slit, the tea bag cannot be repeatedly dunked in the

beverage, as required to obtain a strong infusion. Furthermore, in requiring the tea bag to be forcibly drawn up into the slit, the tea bag can be ruptured by the sharp edges of the slit, leading undesirably to the leakage of tea leaves into the cup, and the drawstring can even be separated from the tea bag, which could occur prior to the tea bag being held captive in the slit and lead to the tea bag remaining in the cup and providing for over-infused tea.

It is thus an aim of the present invention to provide an improved lid for use with a beverage bag unit, in particular a lid which allows for the drawstring of the beverage bag unit to be attached easily to the lid, and the beverage bag of the beverage bag unit to be squeezed and held clear of the beverage product on attainment of a beverage product at a required strength.

In one aspect the present invention provides a lid for a cup which provides for use of a beverage bag unit comprising a beverage bag and a drawstring connected to the beverage bag, the lid comprising: a flange for attachment to a cup; and a body unit comprising a body section including an aperture through which the drawstring is slideable, and first and second wing members operable to allow a user to squeeze the beverage bag when in a raised position.

Preferably, the flange is configured to provide a fluid-tight seal with a cup.

Preferably, the aperture is sized such that the drawstring is freely slideable therein.

Preferably, the beverage bag unit comprises a tab provided to the drawstring, and the aperture is sized such that the tab can be threaded therethrough.

Preferably, the body section includes a drinking spout.

Preferably, the wing members are hinged to the body section.

In one embodiment the wing members are resiliently hinged to the body section.

Preferably, the wing members are hinged to a central region of the body section such as to be hinged in opposite senses on operation of the same.

In one embodiment each wing member is attached to the body section by a hinge element about which the same is hinged on operation of the wing member, and a perforated connection which is broken on operation of the wing member.

Preferably, the wing members are recessed such as to receive ones of fingers or a finger and a thumb of a user.

Preferably, the wing members include counterpart engagement elements which engage one another when the wing members are in a hinged configuration following squeezing of the beverage bag, such as to lock the wing members in the hinged configuration and thereby hold the beverage bag in the raised position.

In one embodiment the engagement element on one wing member comprises a projection and the engagement element on the other wing member comprises a recess, with locking being achieved by frictional engagement of the same.

In one embodiment the body unit comprises an upstanding wall member, a lower edge of which is connected to the flange, and a closure member which extends inwardly of an upper edge of the wall member and comprises the body section and the wing members.

In one embodiment the lid is integrally formed.

Preferably, the lid is vacuum formed from a plastics material.

In one embodiment the beverage bag unit comprises a tea bag unit.

In another aspect the present invention provides a lid for a cup which provides for use of a beverage bag unit comprising a beverage bag and a drawstring connected to the beverage bag, the lid comprising: a flange for attachment to a cup; and a body unit comprising a body section including an aperture through which the drawstring is slideable, and first and second wing members operable to hold a beverage bag in a raised position.

Preferably, the wing members include counterpart engagement elements which engage one another to lock the wing members such as to hold the beverage bag in the raised position.

In one embodiment the engagement element on one wing member comprises a projection and the engagement element on the other wing member comprises a recess, with locking being achieved by frictional engagement of the same.

A preferred embodiment of the present invention will now be described hereinbelow by way of example only with reference to the accompanying drawings:

Figure 1 illustrates a perspective view of a lid in accordance with a preferred embodiment of the present invention;

Figure 2 illustrates a side view of the lid of Figure 1;

Figure 3 illustrates a plan view of the lid of Figure 1;

Figure 4 illustrates an underside view of the lid of Figure 1;

Figure 5 illustrates a perspective sectional view (along section I-I) of the lid of Figure 1;

Figure 6 illustrates a side sectional view (along section I-I) of the lid of Figure 1;

Figures 7(a) to (c) illustrate the operation of the lid of Figure 1 in relation to a beverage bag unit; and

Figure 8 illustrates a plan view of a lid as a modification of the lid of Figure 1.

The lid 3 comprises an annular flange 5 which is configured, in this embodiment dimensioned, to be a tight, sealing fit with the upper rim of an open-topped cup which contains a beverage product such as to prevent leakage at the junction of the flange 5 and the cup, and a body unit 7 which is formed integrally with the flange 5 and encloses the cup.

In this embodiment the lid 3 is formed from a plastics material, with the material being determined according to the beverage product. In a preferred embodiment the lid 3 is vacuum formed.

In this embodiment the body unit 7 comprises an annular wall member 9, a lower edge of which is formed with the flange 5, and a closure member 11 which extends inwardly of an upper edge of the wall member 9, here substantially parallel to the flange 5, and encloses the cup.

In this embodiment the wall member 9 has a height such that the beverage bag of a beverage bag unit can be maintained clear, or at least substantially

clear, of the beverage product contained by the cup when full, as will become apparent hereinbelow.

The closure member 11 comprises a body section 15 and first and second wing members 17, 19 which are hingeable about respective hinges 20, in this embodiment resilient connections, to the body section 15 such as to allow a user to squeeze the beverage bag when raised from the beverage product and hold the beverage bag in a position raised from the beverage product to prevent further infusion when standing, as will be described in more detail hereinbelow. In this embodiment the junction of the wing members 17, 19 to the body section 15 at other than the respective hinges 20 is by a perforated connection 21, which connection 21 is broken on operation of the wing members 17, 19 by a user.

The body section 15 includes a slot 22, in this embodiment centrally thereof, through which the drawstring of an beverage bag unit is threaded. In this embodiment the slot 22 is configured such as to allow the tab on the drawstring to be threaded therethrough. This configuration advantageously allows beverage bag units to be attached to lids 3 either at the time of manufacture or as and when required at service points. Also, as a result of the drawstring being a free, sliding fit in the slot 22, a user can repeatedly dunk the beverage bag into the beverage liquid where a strong infusion is required.

The body section 15 further includes a drinking spout 23 at one edge thereof through which a user drinks the beverage product as contained in the cup.

In one embodiment, for example, where the beverage product is a hot product, the body section 15 can include a caution notice warning of the same, which notice can be vacuum formed into the body section 15 where the lid 3 is vacuum formed.

The wing members 17, 19 are hinged, in this embodiment to a central region of the body section 15, such that on operating the same, the wing members 17, 19 are hinged in opposite senses and encompass the beverage bag when located therebetween. In this embodiment the wing members 17, 19 are recessed to receive ones of fingers or a finger and a thumb, typically a forefinger and a thumb, to allow for operation by squeezing the same.

The wing members 17, 19 include counterpart engagement elements 25, 27 which engage one another when the wing members 17, 19 are in the hinged configuration such as to lock the wing members 17, 19 in the hinged configuration, and thereby hold the beverage bag in the raised position following squeezing. In this embodiment the engagement element 25 on one, the first wing member 17 comprises a projection and the engagement element 27 on the other, second wing member 19 comprises a recess, with the locking being achieved by frictional engagement of the same.

In this embodiment the engagement elements 25, 27 are disposed centrally to the ends of the wing members 17, 19. In other embodiments the engagement elements 25, 27 can be disposed in any configuration, for example, off center, in dependence upon the design of the beverage bag.

A typical operation of the lid 3 in relation to an beverage bag unit 33 will now be described hereinbelow by way of example with reference to Figures 7(a) to (c) of the accompanying drawings.

The beverage bag unit 33 comprises a beverage bag 35 which contains beverage material, a drawstring 37 which is connected to the beverage bag 35 and a tab 38 which is provided to the drawstring 37 to allow for a user to handle the beverage bag unit 33. It will be understood that the present invention finds application in relation to any bagged beverage product, which, for example, includes tea and flavourings. Also the beverage liquid can be hot

or cold, and can be other than water, for example, milk. For the purposes of illustration, the operation of the lid 3 will be described in relation to a tea bag unit, where infused by hot water.

A cup 39 is first filled with a beverage liquid 41, in this embodiment a hot water.

The beverage bag unit 33, in this embodiment a tea bag unit, is then attached to the lid 3 by threading the tab 38 through the slot 22 in the body section 15. In one embodiment the lid 3 can be supplied with the beverage bag unit 33 already pre-threaded thereto.

As illustrated in Figure 7(a), the lid 3 is then fixed to the rim of the cup 39, whereupon the beverage bag 35 falls into the beverage liquid 41. The user can then dunk the beverage bag 35 as required to obtain a beverage product of the required strength.

On attainment of a beverage product at the required strength, the user draws up the beverage bag by raising the tab 38 and operates on the wing members 17, 19 first to squeeze the retained beverage liquid from the beverage bag 35, as illustrated in Figure 7(b), and subsequently lock the wing members 17, 19 in the locked configuration through inter-engagement of the engagement members 25, 27 thereof, such as to hold the beverage bag 35 clear of the beverage product and prevent further infusion, as illustrated in Figure 7(c).

Finally, it will be understood that the present invention has been described in its preferred embodiment and can be modified in many different ways without departing from the scope of the invention as defined by the appended claims.

For example, in one modification where the fill level of the cup allows, the body unit 7 need not include an annular wall member 9.

In another modification, the drinking spout 23 can be omitted, as some users may prefer to remove the lid 3 and attached beverage bag unit following infusion, and thereby drink directly from the cup.

In a further modification, the lid 3 can include a ruptureable aperture to allow for use with a straw; the use of straws being particularly suited to cold beverages.

In a yet further modification, as illustrated in Figure 8, the wing members 17, 19 and the slot 22 in the body section 15 can be offset from the center of the lid 3 in a direction opposed from the drinking spout 23. This configuration allows for a cup to which the lid 3 is fixed to be tilted to a greater degree.

CLAIMS

1. A lid for a cup which provides for use of a beverage bag unit comprising a beverage bag and a drawstring connected to the beverage bag, the lid comprising:
a flange for attachment to a cup; and
a body unit comprising a body section including an aperture through which the drawstring is slideable, and first and second wing members operable to allow a user to squeeze the beverage bag when in a raised position.
2. The lid of claim 1, wherein the flange is configured to provide a fluid-tight seal with a cup.
3. The lid of claim 1 or 2, wherein the aperture is sized such that the drawstring is freely slideable therein.
4. The lid of any of claims 1 to 3, wherein the beverage bag unit comprises a tab provided to the drawstring, and the aperture is sized such that the tab can be threaded therethrough.
5. The lid of any of claims 1 to 4, wherein the body section includes a drinking spout.
6. The lid of any of claims 1 to 5, wherein the wing members are hinged to the body section.
7. The lid of claim 6, wherein the wing members are resiliently hinged to the body section.

8. The lid of claim 6 or 7, wherein the wing members are hinged to a central region of the body section such as to be hinged in opposite senses on operation of the same.
9. The lid of any of claims 6 to 8, wherein each wing member is attached to the body section by a hinge element about which the same is hinged on operation of the wing member, and a perforated connection which is broken on operation of the wing member.
10. The lid of any of claims 1 to 9, wherein the wing members are recessed such as to receive ones of fingers or a finger and a thumb of a user.
11. The lid of any of claims 1 to 10, wherein the wing members include counterpart engagement elements which engage one another when the wing members are in a hinged configuration following squeezing of the beverage bag, such as to lock the wing members in the hinged configuration and thereby hold the beverage bag in the raised position.
12. The lid of claim 11, wherein the engagement element on one wing member comprises a projection and the engagement element on the other wing member comprises a recess, with locking being achieved by frictional engagement of the same.
13. The lid of any of claims 1 to 12, wherein the body unit comprises an upstanding wall member, a lower edge of which is connected to the flange, and a closure member which extends inwardly of an upper edge of the wall member and comprises the body section and the wing members.
14. The lid of any of claims 1 to 13, where integrally formed.

15. The lid of claim 14, where vacuum formed from a plastics material.
16. The lid of any of claims 1 to 15, wherein the beverage bag unit comprises a tea bag unit.
17. A lid for a cup which provides for use of a beverage bag unit comprising a beverage bag and a drawstring connected to the beverage bag, the lid comprising:
a flange for attachment to a cup; and
a body unit comprising a body section including an aperture through which the drawstring is slideable, and first and second wing members operable to hold a beverage bag in a raised position.
18. The lid of claim 17, wherein the wing members include counterpart engagement elements which engage one another to lock the wing members such as to hold the beverage bag in the raised position.
19. The lid of claim 18, wherein the engagement element on one wing member comprises a projection and the engagement element on the other wing member comprises a recess, with locking being achieved by frictional engagement of the same.
20. A lid for a cup substantially as hereinbefore described with reference to the accompanying drawings.

ABSTRACT**LID, IN PARTICULAR FOR A DISPOSABLE CUP**

A lid for a cup which provides for use of a beverage bag unit comprising a beverage bag and a drawstring connected to the beverage bag, the lid comprising: a flange for attachment to a cup; and a body unit comprising a body section including an aperture through which the drawstring is slideable, and first and second wing members operable to allow a user to squeeze the beverage bag when in a raised position.

[Figure 7(c)]

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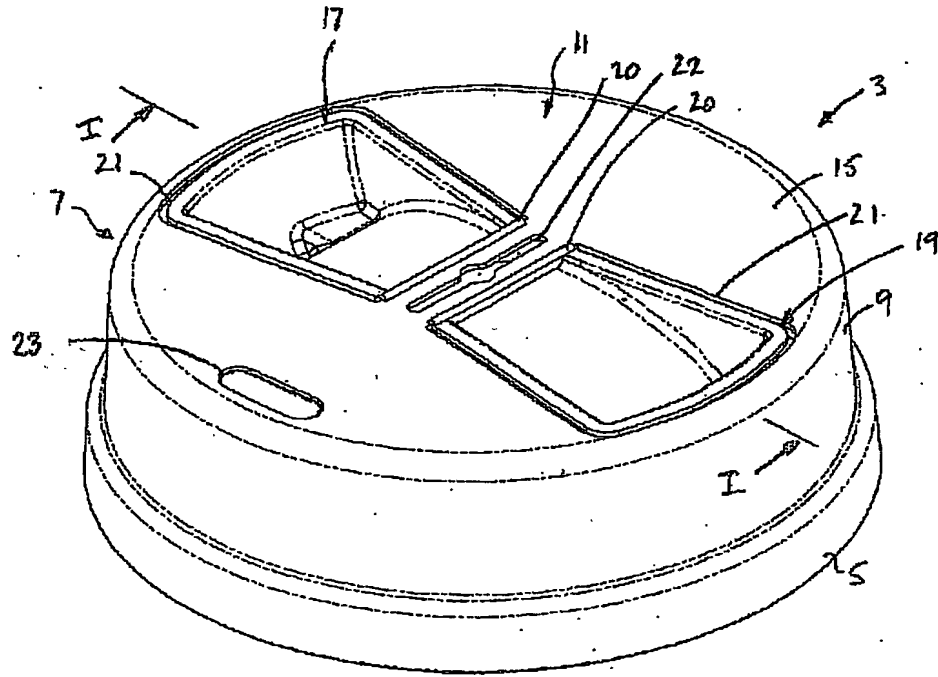


Fig. 1

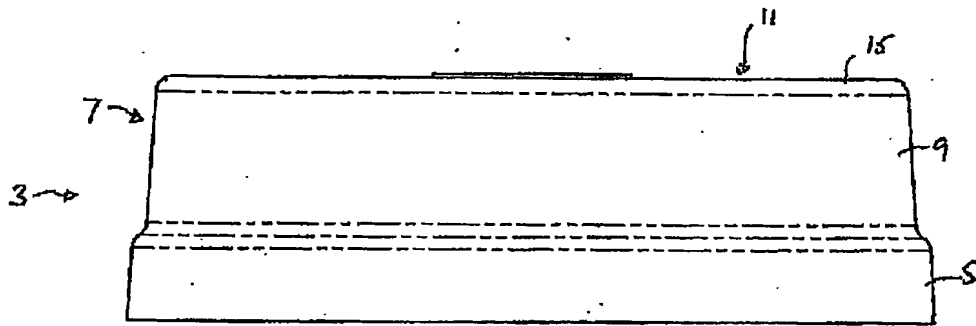
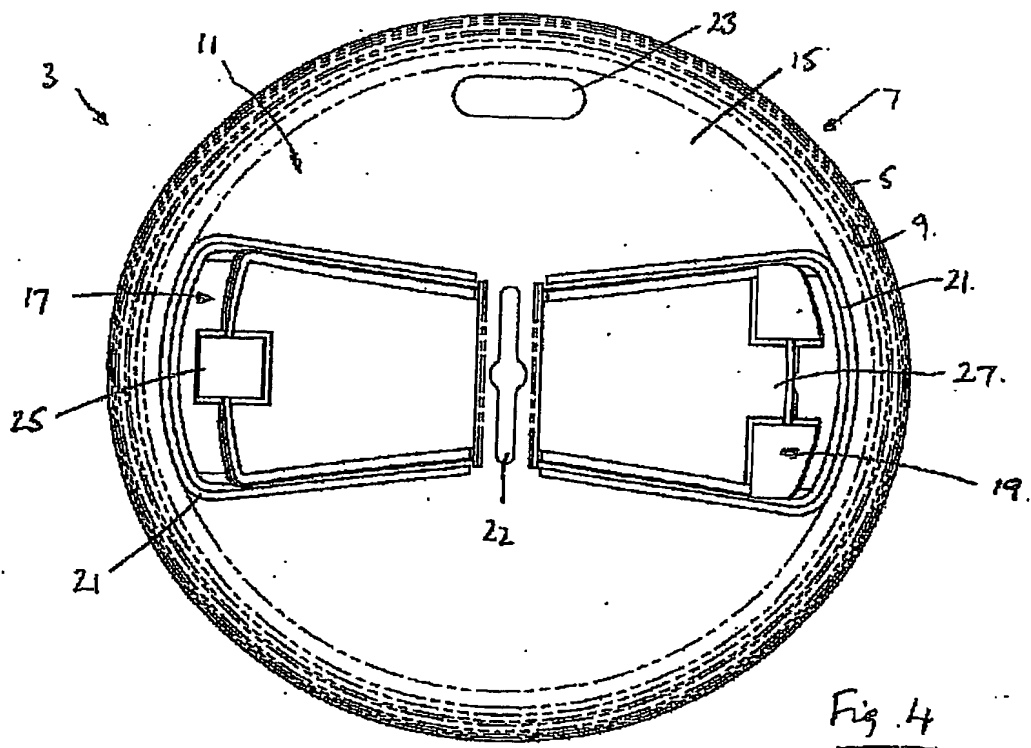
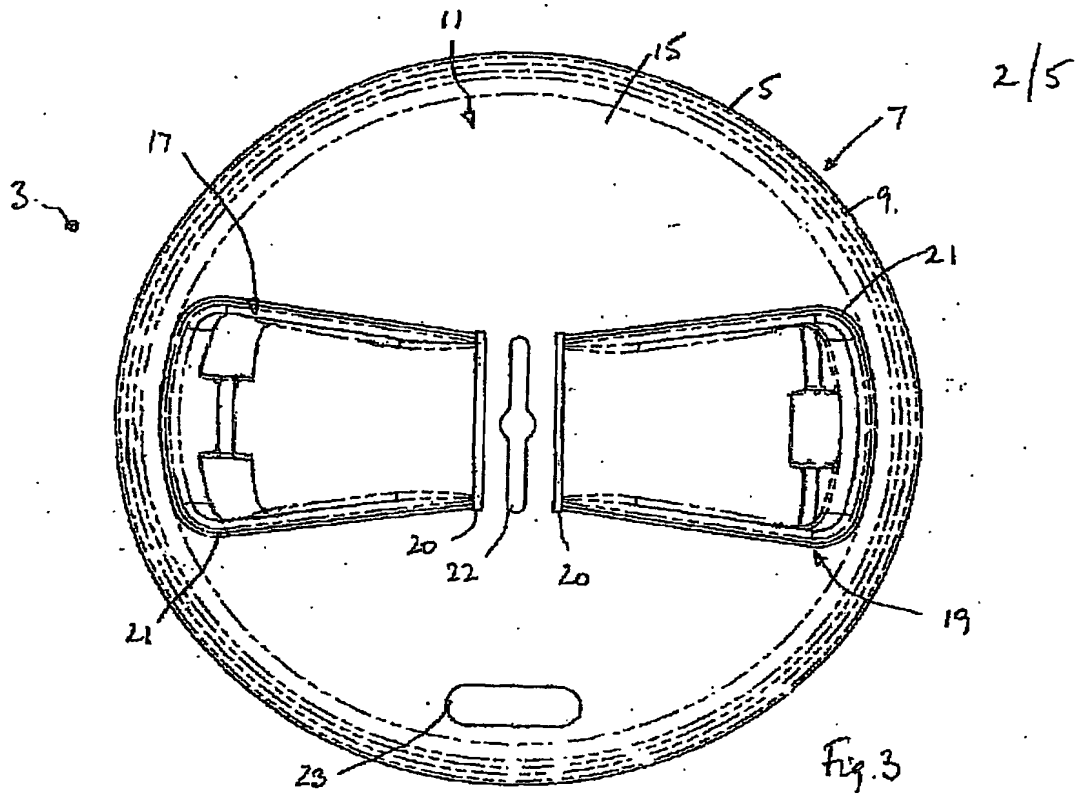


Fig. 2



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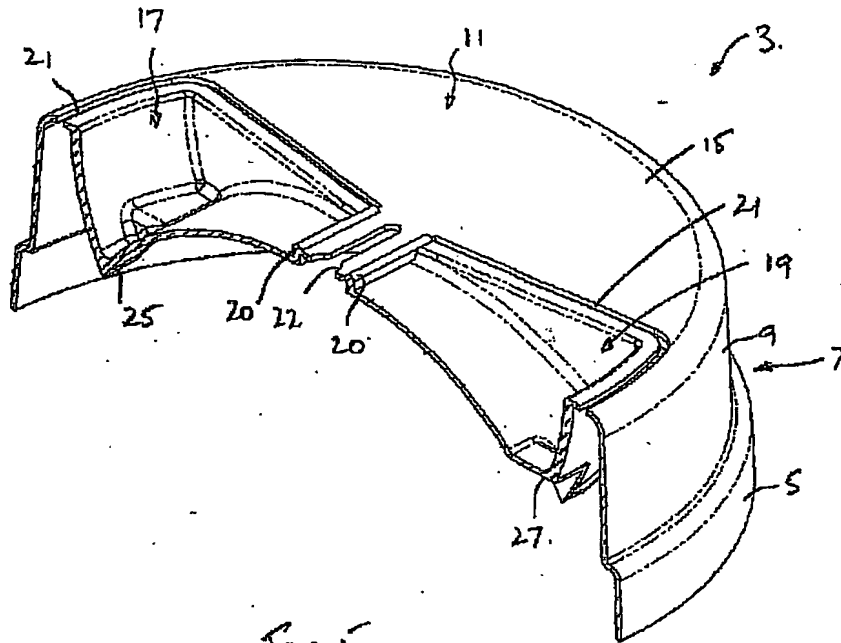


Fig. 5

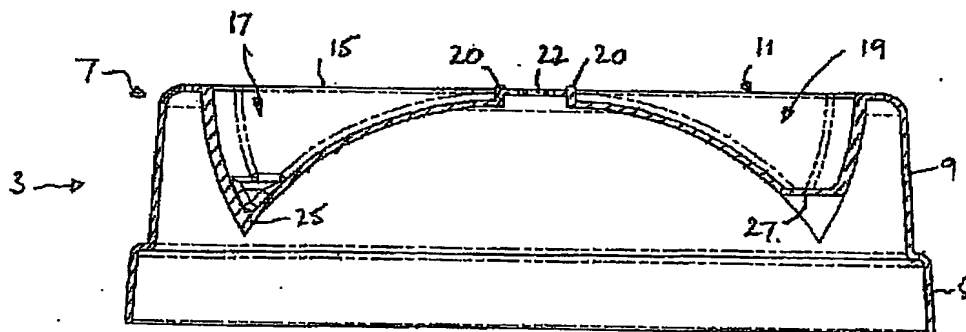


Fig. 6

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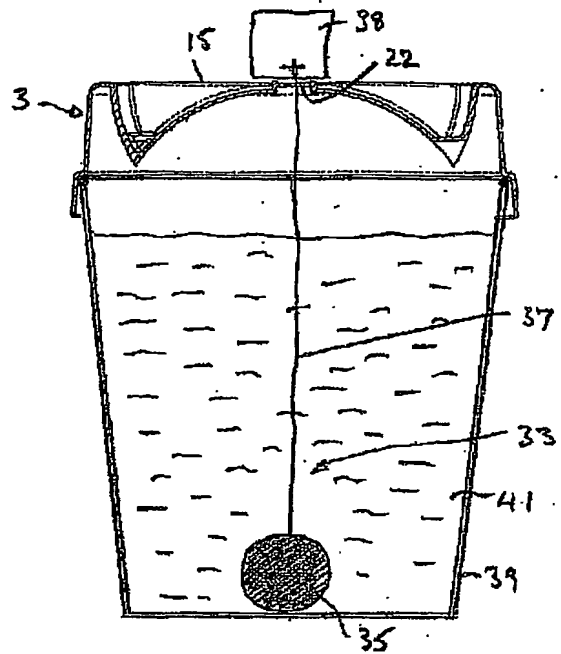


Fig. 7(a)

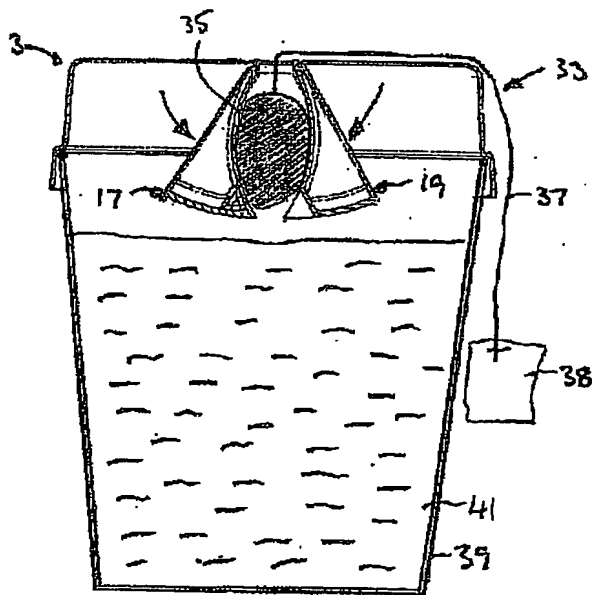


Fig. 7(b)

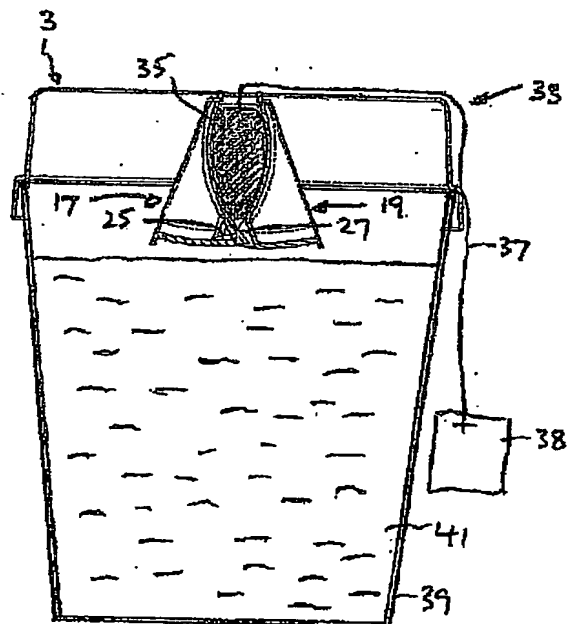
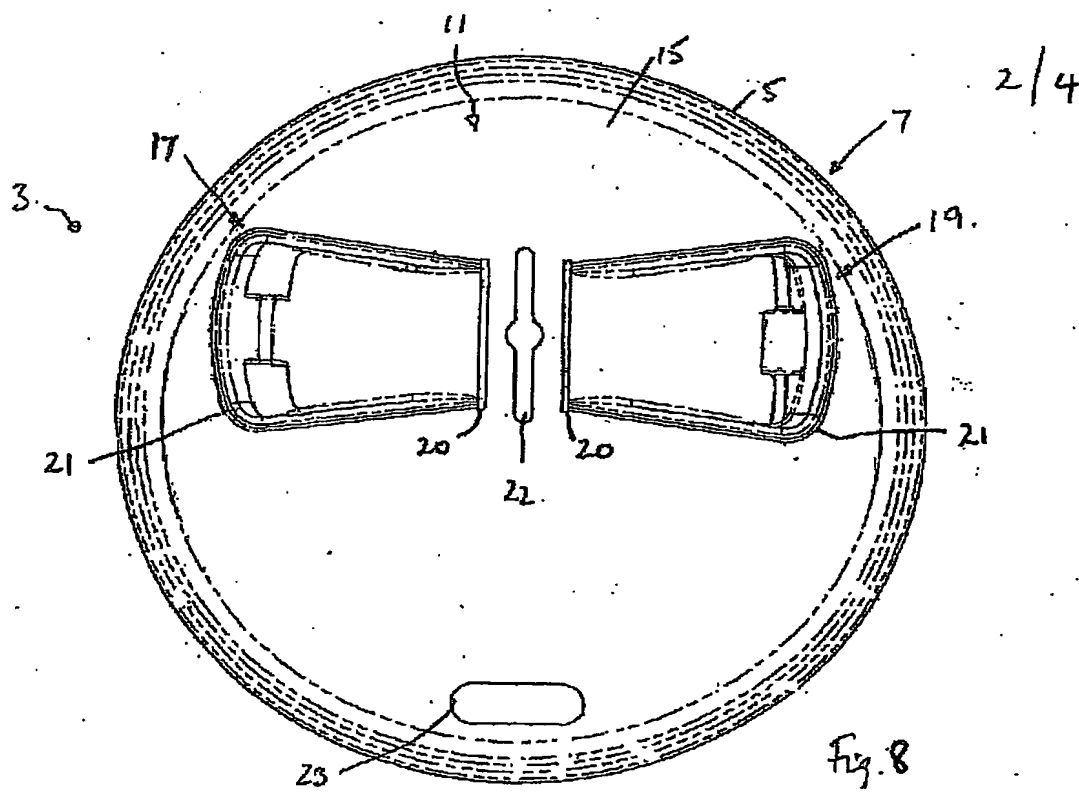


Fig. 7(c)

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